

Space Mission Planning Advisory Group (SMPAG)

Status Report of Activity

Action item:	Title: Reference missions for different NEO threat scenarios	Activity Lead ASI
<p>Description: Define a number of typical NEO threat cases on the basis of relevant parameters. For each case, a reference mission shall be identified and evaluated in order to select the “best” strategy that would imply a deflection of the NEO rather than its disruption.</p> <p>Objective: Define a feasible and effective mission for each specific scenario (reference mission).</p> <p>Background: For a real impact threat, time is too short to work out details of a reference mission. This has to be defined well in advance. It will allow to define what is still needed, allowing testing existing capabilities.</p> <p>Tasks description: to define a feasible and effective mission for a specific scenario (reference mission). Effective means capable of mitigating the threat; feasible means compliant with all kind of constraints, not only in a technical and programmatic framework.</p> <p>Output:</p> <ul style="list-style-type: none">• List of reference missions• Phase 0 study of each reference mission (team composed by SMPAG members) that includes:<ul style="list-style-type: none">- Mission timeline- Mission Design & development planning- Costs (recurring and non)- Technology mapping (TRL)- Technical performance and options- Demonstration tests (on ground qualification / in-orbit validation)- Precursor mission (e.g. ARM-like mission) <p>Schedule: 2016 Define NEO threat cases and preliminary reference mission for each scenario 2017 Present a set of reference mission study results 2018 Submit the final report</p> <p>Status: During the two months covered by the present report, further contacts have been established with the Italian NEO community, and in particular with the people involved in the NEOCC. Interest has been expressed in collaborating with ASI for the task accomplishment, mostly for what concerns the definition of the reference</p>		

scenarios.

The agreement reached with University of Rome “La Sapienza”, to collaborate on the topics related to the assigned task has resulted in one resource fully dedicated to the work associated to the definition of Reference missions for different NEO threat scenarios.

Opening date: 05/11/2015	Status Report date: 05/02/2016	Closure date: 05/02/2016
Report reference:	Access:	